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NOTES ON A STACHYS FROM SOUTHWESTERN VIRGINIA.—"*Stachys palustris*, L., var. *cordata*, Gray (*S. cordata*, Riddell, 1836. *S. Nuttallii*, Shuttlew., 1848.).—Stem beset with spreading or reflexed bristly hairs; leaves hairy or smoothish, *oblong, heart-shaped at the narrowed base*, all more or less petioled; calyx-teeth sometimes shorter.—Common southward and westward." *Gray's Man., 5th ed. p.* 358.

"*Stachys Nuttallii*, Shuttlew.—Perennial, erect, hispid with rigid, spreading or somewhat reflexed hairs; leaves petioled, *oval-elliptic* or *suboblong, narrowed toward the base*, cordate, long-pilose on both sides; floral ones bract form, scarcely surpassing the calyxes; teeth of the campanulate, pubescent calyx short, mucronate-acute; tube of the corolla much exserted. From the mountains of Tennessee (Ruegel!) to Ohio (h. Hook.!). *S. sylvatica*, Nutt. Allied to *S. sylvatica*, but the leaves much narrower at base. Calyx in flower scarcely 2 lines; tube of the corolla almost 4 lines long." *DC. Prod.* 12., *p.* 468.

Dr. Riddell's plant I have not seen and have no access to his description.

A *Stachys* collected near Wytheville, S. W. Va., and represented by a goodly number of specimens received from my indefatigable friend, Mr. Howard Shriver, seems to belong to the foregoing variety or species, but does not accord in all respects, as will appear from the following notes:

Leaves ample, *broadly ovate* or somewhat *oblong-ovate*, more or less acuminate, *rarely* narrowed toward the cordate base, coarsely and unequally crenate, sparsely covered on both sides with bristly hairs, *on long petioles*.

Measurements of the leaves taken from 8 different specimens run thus: *a.* Length of the lamina, including the acumination, 5¼ inches; breadth at the widest part, 3¼; length of the petiole, 2¼. *b.* 4¼—2½—1¼. *c.* 4—2½—1⅜. *d.* 4—2¼—1½. *e.* 3¼—2—1⅜. *f.* 3—1½—1½. *g.* 2¾—1⅝—1⅝. *h.* 2⅝—1⅝—⅝.

In a single specimen only the lamina of the leaf is narrowed toward the base, but even then, the outline is broadly ovate.

Calyx *campanulate*, minutely pubescent, *less than* 2 *lines long*, with mucronate-acute and *short* teeth, much shorter than observed in any forms of *S. palustris*, L. or *S. sylvatica*, L., to the latter of which it bears a strong general resemblance; tube of the corolla much exserted, *narrow*, 4 lines or more in length.

The two chief characters given by Koch (*Fl. Germ.* 2, *p.* 491.), by which *S. palustris* is distinguished from *S. sylvatica*, are 1. "not glandular-pilose above," and 2. "subterranean stolons clavate-thickened at the tips." The Wytheville plants lack glandular hairs, but how the underground stolons may be fashioned I do not know, since none were sent.

It is desirable that the botanists of the South and West should look up Dr. Riddell's *S. cordata*, for it is only by the study of an abundance of material brought together from every quarter that its claim to specific rank can be settled *pro* or *con*. *S. palustris*, L. in the E. United States is an exceedingly variable species. Dr. Gray's varieties *aspera* and *glabra* present numberless forms and pass into each other by insensible gradations. But from all these Mr. Shriver's plants differ in their smaller flowers, short calyx-teeth, slender corolla-tubes, larger and broader leaves and long petioles.—PROF. THOS. C. PORTER.

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SOME NOTES FROM WYTHEVILLE, VIRGINIA.—I wish to correct a misapprehension of many botanists in reference to this part of Virginia. My remarks, however, apply almost exclusively to the immediate vicinity of Wytheville. Situated on the Alleghany Plateau, half a mile above sea level, our flora is referable naturally to a higher latitude. Our plants, therefore, are not southern, their interest being derived from their mountain, not their southern pecularities. Without further remark I append a few notes on plants of some interest.

1. *Trautvetteria palmata*, F. & M., not here, but collected on mountains 50 or 60 miles distant. 2. *Thalictrum clavatum*, DC., only in one spot. 3. *Delphinium exaltatum*, Ait., and *tricorne*, Mx. 4. *Aconitum uncinatum*, L., is rare; stout and erect in some places; very slender and creeping in others. 5. *Zanthorhiza apiifolia*, L'Her., Pulaski County, 20 miles distant. 6. *Hydrastis Canadensis*, L., rare here and in Pulaski Co. 7. *Cimicifuga Americana*, Mx., I cannot detect. 8. *Magnolia Fraseri*, Walt., Stony Fork, 8 miles distant. 9. *Berberis Canadensis*, Pursh, passim. 10. *Jeffersonia diphylla*, Pers. 11. *Brasenia peltata*, Pursh, from an adjoining county. 12. *Adlumia cirrhosa*, Raf., on near mountain sides. 13. *Dicentra Cucullaria*, DC., rare. 14. *D. eximia*, DC., not here, but collected about 30 miles distant. 15. *Draba verna*, L., rare; *D. ramosissima*, Desv., vide 5. 16. *Viola odorata*, L., *sagittata*, Ait., *pedata*, L., *rostrata*, Pursh, *pubescens*, Ait. and var., rare, *hastata*, Mx., common. 17. *Drosera rotundifolia*, L., only and rare. *Hypericum prolificum*, L., and *Sarothra*, Mx., rather common. *H. Drummondii*, T. & G. from Bristol, Tenn. *Dianthus Armeria*, L., passim, sparingly. *Claytonia Virginica*, L., rather rare. *Geranium maculatum*, L., and *Carolinianum*, L., common. *Impatiens pallida*, Nutt., and *fulva*, Nutt., common. *Oxalis violacea*, L., rather common *Ptelea trifoliata*. L., vide 5. *Rhus aromatica*, Ait., vide 5. *Ampelopsis quinquefolia*, Mx., passim. *Pachystima Canbyi*, Gr., in one place and vide 5. *Polygala paucifolia*, Willd., in several places. *Trifolium reflexum*, L., very rare. *Robinia hispida*, L., rare. *Desmodium viridiflorum*, Beck, Buchanan, Virginia. *Stylosanthes elatior*, Swartz, rare and vide 5. *Apios tuberosa*, Mœnch, rare. *Clitoria Mariana*, L., common in the eastern part of the state; not here. *Baptisia australis*, R. Br., vide 5. *Cassia nictitans*, L., never saw but one plant; common at Grayson, White Sulphur; and vide 5. *C. Chamæcrista*, L., none; collected at Big Lick, Virginia. *Calycanthus*, wild towards Tazewell; not here. *Hydrangea arborescens*, L., and *radiata*, Walt.? common. *Saxifraga leucanthemifolia*, Mx., at Salt Pond; none here. *Boykinia aconitifolia*, Nutt., found a few plants, vide 5; also on mountains beyond Hillsville; none here. *Heuchera Americana*, L., and *hispida*, Ph. *Mitella diphylla*, L., common; *nuda*, L., none. *Tiarella cordifolia*, L., Stony Fork only. *Sedum ternatum*, Mx., and *telephioides*, Mx. *Jussiæa decurrens*, DC., vide 5. *Passiflora lutea*, L., rare; *incarnata*, L., none here, but plenty east of us. *Hydrocotyle Americana*. L., Buchanan, Virginia. *Archemora rigida*, DC. *Ligusticum actæifolium*, Mx. 18. *Erigenia bulbosa*, Nutt., none; collected in Lincoln County, Kentucky. *Diodia*, vide 5. *Valeriana pauciflora*, Mx., vide 18. *Elephantopus Carolinianus*, Willd., none here; collected at Big Lick, Virginia. *Liatris graminifolia*, Willd., and *spicata*, Willd. *Aster lævis*, L., in every variety of its polymorphous phase, and *patens*, Ait., *puniceus*, L., and *Novæ-Angliæ*, L., in all their beauty and splendor. *Solidago Boottii*, Hook., passim; *odora*, Ait., rare. *Chrysopsis graminifolia*, Nutt., mountains. *Chrysogonum Virginianum*, L., vide 5. *Rudbeckia triloba*, L., *laciniata*, L., *speciosa*, Wenderoth, *fulgida*. Ait., *hirta*, L.? *Coreopsis senifolia*, Mx., mountains, passim. *Bidens frondosa*, L. *Filago Germanica*, L., very rare. *Senecio Elliottii*, T. & G.? *Lobelia puberula*, Mx., 50 miles distant. *Vaccinium erythrocarpon*, Mx., rare. *Arctostaphylos Uva-ursi*, Spreng., Hillsville, Dr. Haller. *Leucothoe recurva*, Buckley, passim. *Clethra acuminata*, Mx., 10 or 12 miles distant; *alnifolia*, L., 35 miles distant. *Azalea calendulacea*, Mx., and *nudiflora*, L., passim. *Rhododendron maximum*, L., common; *Catawbiense*, Mx., rare. *Schweinitzia odorata*, Ell., in only one place. *Galax aphylla*, L., passim. *Ilex decidua*, Walt., rare. *Halesia tetraptera*, L., vide 5. *Dodecatheon Meadia*, L., rare. *Trientalis Americana*, Pursh., common. *Samolus Valerandi*, L., var. *Americanus*,

Gray, rare. *Ruellia strepens*, L., vide 5. *Lycopus Virginicus*, L. *Cunila Mariana*, L., mountains. *Cedronella cordata*, Benth., in two places. *Hydrophyllum Virginicum*, L., *macrophyllum*, Nutt., *appendiculatum*, Mx.; *Canadense*, L., vide 5. *Bartonia tenella*, Muhl., rare. *Obolaria Virginica*, L., passim, but in small quantity. *Chionanthus Virginica*, L. *Aristolochia Serpentaria*, L., and *Sipho*, L'Her. *Pyrularia oleifera*, Gray, Stony Fork only. *Euphorbia commutata*, Engelm., vide 5. *Comptonia asplenifolia*, Ait., none here, but abundant 50 miles distant. *Pinus pungens*, Mx. *Thuja occidentalis*, L., passim. *Taxus baccata*, L., var. *Canadensis*, in one place and vide 5. *Veratrum viride*, Ait., none here, but 50 miles distant. *Prosartes lanuginosa*, Don. *Uvularia grandiflora*, Smith. *Clintonia borealis*, Raf., and *umbellata*, Torr., common in the mountains. *Convallaria majalis*, L., common in the mountains. *Scilla Fraseri*, Gr., very rare.—HOWARD SHRIVER.

FERNS NEAR HANOVER, IND. (*continued from April number, p.* 23.).—*Aspidium thelypteris*, Swartz., and *A. Noveboracense*, Swartz., are both common to the flat woods and also the fence rows of most of the poorer land during the autumn months. *A. Goldianum*, Hook., is very local, being confined as far as we know to a single deep and cool glen and is in that portion of it from which the summer's sun scarcely evaporates the surface moisture. Here this elegant fern assumes such a magnificent growth as to rank it first among our species in attractiveness. Amid the dampness of the rich mossy carpet and the shade of the towering cliffs this beauty finds a fitting home. Here its grand fronds, often 3 to 4 feet in length by a foot or more in breadth, tower majestically above the most ambitious of its surrounding kinsmen. *A. Filix-mas*, Swartz., is found in the ravines from August till early winter. *A. acrostichoides*, Swartz., is quite widely scattered along our streams and in the rich thickets and also occurs sparingly in the damper portions of the river bluffs. *Cystopteris bulbifera*, Bernh., is abundant in all the woods and about all the moist rocks. It appears in fruit in early summer and keeps its beauty late into the fall. Of more local range, though not rare is *Cystopteris fragilis*, Bernh. Its season of perfection of fruit and frond is during the months of August and September. *Onoclea sensibilis*, L., and also the variety *obtusilobata*, are of limited occurrence in grassy thickets and fence rows. Of the variety I have 4 or 5 specimens showing various transitions from the perfect frond and all collected in the same patch with perfect specimens of *O. sensibilis*, which fact we think goes far to show little constancy here in this variety. *Osmunda regalis*, L., is occasionally met with in the wet and flat timberland. Of the genus *Botrychium*, *B. Virginicum*, Swartz., is pretty generally distributed through our richer woods and thickets, but is by no means plentiful. With the exception of the evergreen species which retain their fruit into early spring, this is the earliest fruiting fern with us. In the fall, *B. lunarioides*, Swartz., vars. *obliquum* and *dissectum* were very sparingly found, it being the first time we have observed these ferns here, although having collected more or less for 3 or 4 years. A few other species may yet be secured from the portions of our county farther back from the river, as the rocky bluffs of some of our larger creeks together with the dense and rich bordering thickets present favorable spots for fern growth. By another season we hope the pages of the BULLETIN will be able to report some interesting finds from these less accessible regions.—A. H. YOUNG, *Hanover, Ind.*

A NEW PREPARATION FOR POISONING PLANTS.—There are few botanists having collections of any size who are not at times perplexed to find some poison for their specimens, more efficient than the solution of corrosive sublimate now in general use. For the benefit of those wishing to make a trial of something new I offer the following:

Corrosive sublimate	1¾ ounces,
Carbolic acid	2½ fluid drachms,
Alcohol	1 pint.

This I apply to fruits and flowers with an ordinary small sized paint brush.

My collection contains at least fifteen thousand specimens, and, though I have used the above formula for five years, I have yet to find the first trace of insect or larval injury in my herbarium.—Dr. J. T. Rothrock.

Damiana.—In a recent number of the Botanical Bulletin I introduced an old plant, *Bigelovia veneta*, Gray, under the new name of *Damiana*. I then and there expressed my conviction that its vaunted medical powers would not stand the test of time. To these statements I still adhere. Since the publication of that note I have received from H. Helmich & Co., of Washington, another *Damiana*. This is probably new to science and reaches us from Western Mexico. Dr. Vasey and Mr. Ward determined it to be a *Turnera*, and the latter furnished a good description of it under the name of *Turnera aphrodisiaca*. In favor of this plant there are a number of positive statements as to its value, and also some reported failures. Besides these there are two other kinds of *Damiana*, probably both *Turneras* and both from Mexico. I do not know of any reliable information upon the medical effects (whether good or bad) of either. It is to be observed however that the family of *Turneraceæ* is accredited with tonic properties.—J. T. R.

A Monster Grape Vine.—A few days since while in the woods with a companion my attention was directed to a vine, which simply looked immense; and, as succeeding measurements go to show, would not be an unfit companion for the California Vine of Centennial notoriety. At a distance of 3 to 8 feet above the ground its trunk measured 36 inches, at 8 to 16 feet, 32 inches, giving respectively diameters of 12 and 10⅔ inches. At about the height of sixteen feet it began to branch and of these branches there were nine with a diameter of from 2 to 4 inches, and six with diameters of from 1 to 1 ½ inches. These branches spread towards all points of the compass by seizing the support of many large trees near by. Comparing the heights of these trees, over which this wonderful vine had thrown its festoon of branchlets, my companion and myself came to the conclusion that if this vine were spread out upon the ground it would cover a plot with a diameter of not less than 200 feet in all directions.

Indeed, were it not for the seeming incredibility of the extent of this *native monster*, I should have said, in estimating the distance of the drooping branchlets that the branch spread in all directions from the main stalk, that it could hardly have fallen short of 125 feet.

The ground upon which this vine grows is not rich by any means. Two to three inches upon the top represent the decaying debris of the wood vegetation, while below is a compact and tenacious clay. The vine is located near the edge of the timber. The species is not known to the writer, as when observed it had neither leaves nor fruit, but it is probably *V. Labrusca*, L., as that is our common wild grape. However, as *V. cordifolia*, Mx. and *V. æstivalis*, Mx. are both found here, it might be one of these.—A. H. Y.

Dodecatheon Meadia, L.—Since writing the above I have chanced to examine a most luxuriant growth of the American Cowslip, in which I believe 10,000 specimens of this beautiful plant could be procured. The color of the flowers varies from a rich creamy white to a light purple. The base of the corolla is generally yellowish and has a fringe of reddish brown next the stamens, of which color the base of the stamens partakes more or less. The favorite position of these Cowslips seems to be in the water worn crevices of the upper lime-stone cliff-rocks.—A. H. Y.

Some new Musci, by C. F. Austin.—Dicranum (Campylopus) Rauei, *n. sp.*—Caule compacte cæspitoso brevi inferne dense tomentoso-radiculoso erecto, foliis subnitidis erectis siccitatis leniter tortilibus e basi lanceolata subulatis convoluto-concavis semel tortis margine dorsoque ad apicem minute serratis, costa mediocri excurrente, reti denso minuto subobscuro basilari duplo majore parum pellucido angulari paullulum inflato; inflorescentia dioica? capsula cylindrica erecto-sub-

incurva lævi pallida haud strumosa, seta circa 8-lineari flexuosa tenuissima gracili pallida, operculo longe rostrato, annulo angusto, peristomii dentibus profunde fissis, calyptra conico-cylindrica basi leniter fissa vix ad operculi basim decedente: colore læte fulvo-viridi.

Colorado, 1875. *Brandegee* (*Rau*).

Readily distinguished by its light yellowish green color, compact growth, shortish twisted convolute nearly smooth leaves with a subexcurrent costa and small cells, flexuose slender pedicel, slightly curved and nearly smooth capsule, and by the very short calyptra—barely more than covering the rostrum of the operculum.

It has somewhat the appearance of *D. fulvum*, but is much smaller and more compact, leaves shorter, costa narrower, reticulation larger, capsule more curved, calyptra shorter, etc. In shape, position and reticulation of the leaves, it is almost precisely like a form of *D. Schraderi*, which I have found near Closter, growing in situations where one would naturally look for *D. fulvum*, and also resembling this species almost exactly in general appearance. In *D. Rauei* the capsule is a little narrower than in *D. Shraderi*, but is of precisely the same color and is also nearly or quite as much incurved. But the latter is a much larger species, the leaves are not shining, and the pedicel is much longer and straight, and the calyptra is much larger, descending to at least the middle of the capsule.

TRICHOSTOMUM? SCITULUM, *n. sp.*—Plantæ minutæ subcæspitosæ; caule tenui 12-lineari flexuoso-erecto; foliis distichis (semper?) e basi erecta subvaginante valde undato-patentibus abrupte linealibus canaliculatis laxiuscule areolatis valde scabroso-papillosis margine eroso-serratis,–costa percurrente (vel breviter excurrente?): cætera desunt.

On dry shaded limestone rocks at the zinc mines, Ogdensburg, New Jersey. A very small and apparently distinct species. Position of the leaves much as in *Distichium inclinatum;* but they are more undate-flexuose, less solid and not so acute, and the papillæ on their surface are larger, etc.

BARBULA CLOSTERI, *n. sp.*—Caule valde abreviato (vix ultra lineari) laxe cæspitoso, foliis recurvo-patentibus in sicco paulum mutantibus lineali-lanceolatis, canaliculato-carinatis, margine integerrimo uno alterove infra medium lenissime recurvo vel toto plano, apice obtusiusculo minutissime hyalino-apiculato (ut in *B. convoluta*), costa validiuscula percurrente vel brevissime excurrente, rete superne subminuto granuloso-papilloso inferne perlaxo hyalino: flores et fructu desunt: color læte flavido-virens.

On the ground near Closter, Sept., 1867; not since re-discovered, although frequently looked for. Nearest to *B. convoluta;* but that has the leaves more erect, more ovate (wider at the base), abruptly carinate, more acute, and the areolation is one-half smaller.

FUNARIA RAVENELII, *n. sp.*—A *F. hygrometrica* cui proxima est differt: foliis angustioribus patulis excurrenti-nervibus, capsula angustiore basi acutiore in sicco magis conformiter costata textura densiore, operculo magis persistente, peristomii dentibus (notabiliter ad basim) minus crebre articulatis, etc.

Seaboard of South Carolina, July, 1874, *Ravenel.*

In *F. Ravenelii* the capsule is very acute at the base, and of a dark brownish red color *even when barely mature;* when dry the ridges are very prominent and remarkably uniform, and the mouth is very oblique, being brought into nearly the same plane as the under side of the (horizontal) *capsule*; the texture is thickish and opake; the ordinary cells are heteromorphous, and at the apex of the capsule pass abruptly into the very solid dark fuscous subcubical ones, which form a narrow rim about its mouth. The capsule of *F. hygrometrica* is always pale yellow until after maturity; in the dry state the ridges are not uniform, the texture is lax and subpellucid, and there are 3 or 4 rows of cells immediately beneath the rim which are vertically compressed, and thus the ordinary cells pass gradually

into the very solid vertically much compressed (transversely elongated) indistinct ones of the rim itself. I have examined many specimens of *F. hygrometrica* from all parts of N. America, and find the capsule in all to be similar in shape and texture, and only when merging into the form known as "Var. *patula*" do I find spreading leaves; but these are broader with the costa less strongly excurrent.

BRYUM CLINTONI, AUST. Mss 1869. Ab. *Br. cyclophyllo* simillimo distinctum; statura multum majore foliis cochleariformi-concavis minus patentibus haud marginatis, cellulis multum crassioribus vesciculosis, costa valde incrassata, etc. Wet places along Caledonia Creek, Western New York, (1865) *Clinton*.

RHYNCHOSTEGIUM NOVÆ-CÆSAREÆ, AUST.—*Hypnum micans*, WILS.; not of SWARTZ;—*Hypnum Novæ-Cæsareæ*, AUST. Musc. Appalach. n. 440;—*Chrysobryum micans*, LINDB. SULLIV. Icones Suppl. p. 91, t. 67. This species is quite frequent in the Alleghany mountains of Pennsylvania, where it was found fertile by Messrs. WOLLE and RAU in 1874. Some of the capsules are too old, but they are sufficiently well preserved to show the hypnoid character of the peristome; while there are a few of the capsules sufficiently developed to show,—when taken in connection with this character, with the habit of the plant, shape and reticulation of the leaves, etc., that its proper place is in the *Raphidostegium* section of the genus (or subgenus) RHYNCHOSTEGIUM. Calyptra smooth, slightly twisted, fugacious. Capsule small, subcernuous or horizontal, oval or obovate, (when old obconic and wide-mouthed,) nearly regular; operculum, shortly but very distinctly rostrate; annulus not seen; peristome hypnoid, processes as long as the teeth, more or less split in the keel, ciliolæ not seen. Pedicel very slender, about one inch long, cygneous, smooth, dark red. Perichæth densely radiculose at the base from the axils of the leaves, few-leaved; its leaves small, erect, hyaline, ecostate, straight, lanceolate-ovate, acute, distantly dentate-serrate above the middle; vaginula usually longer than the leaves, herbaceous, dark red and copiously rooting at the mouth. Pistillidia 2-8, paraphysate; the paraphyses deep yellow. The plant is diœcious. The male inflorescence, etc., is described and figured in the Icones Suppl. referred to above. I have seen no diagnosis of Dr. Lindberg's "*Chrysobryum*," but have no hesitation in pronouncing the genus superfluous so far as this plant is concerned. It grows only upon rocks which are frequently inundated, in mountain rivulets; and, although, sometimes is abundant, it is also often nearly exterminated from the same ravine by heavy freshets.

RHYNCHOSTEGIUM MICANS (SWARTZ).—*Hypnum micans*, SWARTZ Adnot. Botan. (1829). *H. fulvum*, *H. tenue* and *H. subsimplex*, H. & W.—*H. albulum* C. MULL.—*H. albulum* and *H. fulvum*, SULLIV. ICON. (I.) tt. 112 and 125, etc. The only difference there is between the so-called varieties of this plant is in their size. What are supposed to be its two extremes in this respect are figured in the Icones, referred to above, under the names of *Hyp. albulum* and *Hyp. fulvum*. The operculum is frequently shortly rostrate at least when dry. The mode of growth is the same as in *Rhynchostegium serrulatum* and *R. geophilum;* but as the plant is subaquatic the stems are often more elongated than in either of these.

Rhynchostegium delicatulum, JAMES; SULLIV. Icon. Suppl. p.93, t.69, is only a starved form of *Hypnum recurvans*, SCHWGR.; SULLIV. Icon. I. p. 177, t. 111. In fact the figures in the Suppl. give a better representation of this most common American Hypnum, as it has generally occurred to me, than do the figures in the first volume; particularly those which represent the rather long-rostrate operculum, the strongly serrated apex of the leaf, and the much inflated cells at its basal angles (almost precisely as in *Hypnum nemorosum*). However, the species varies not a little in all these respects, (chiefly in the length of the operculum and in the serratures of the leaf—both strongly serrated and entire on the same stem. In my judgment neither *Hypnum recurvans* nor *H. cylindricarpum* are true *Rhynchostegia;* but rather a sort of connecting link between between them and the *Stereodontes*. And I have generally found it difficult to distinguish small forms of the

former, when sterile, from the latter, or large forms of it from *Hypnum nemorosum*.

Rhynchostegium Jamesii, SULLIV. Icon. Suppl. p. 92, t. 68, is no *Rhynchostegium*, as a glance at the figure of the perichæth will show!—its leaves being very large, convolute and plicate. It is no doubt *Hypnum hamulosum?* SULLIV. and LESQX. Exsic. ed. 2, n. 478;=*Hyp. pallescens*, Musc. Appallach. n. 414!=*Hyp.* (*Cupressina*) *depressulum*, C. MULL. Manip. Musc. Nov. 1875, n. 5 and 6, p. 7!=*Pylaisæa polyantha*, JAMES Catalogue (1864)! That it is a mere form, or var. of *Hypnum reptile*, MICHX. Fl. Bor. Amer. (1803), there cannot be a shadow of doubt. And LINDBERG has shown that Michaux's *Hyp. reptile* is the identical *Leskea pallescens* HEDW. Sp. Musc. (1801);—*Hyp. pallescens* (HEDW.) P. BEAUV. Prodr. (1805). The moss which we now have under consideration is the var. *protuberans* (BRID.) LINDB.;—*Hyp. pallescens* Br. Eu. (In the work last quoted, as well as Schimper's Synopsis, the perichætial leaves are erroneously said to be unicostate.) I have not seen the identical specimens from which the figures were drawn for the Icones Suppl.; but have the plant as there represented from various (northern) localities. *Hyp. reptile*, var. *viride*. Musc. Appalach. n. 416, appears to be a form of this same variety (*protuberans*); in some respects it closely resembles *Hyp. adnatum* (a sort of connecting link between the *Amblystegia* and the *Stereodontes*) and is not infrequently confounded with it.

NOTES ON HEPATICOLOGY, BY C. F. AUSTIN.—JUNGERMANIA (LOPHOCOLEA?) EXIGUA, *n. sp.*—Plantæ minutissimæ parasiticæ; caule subcæspitoso simplici erecto tenuissimo vix lineam longo, foliis dissitis suberectis obliquis decurrentibus ovato-quadratis acutiuscule subinæqualiter emarginato-bifidis, amphigastriis subulato-filiformibus (obsoletisve), fructu——?

Parasitic on the leaves of "*Plagiochila distinctifolia*" from Jamaica, in Herb. TAYLOR.—The lowermost leaves are but little larger than the amphigastria, and usually like them, subulate. There are no amphigastria above the base of the stem, where the leaves appear to be 3-ranked. Areolation minute.

CEPHALOZIA FRANCISCI, var. b, *fluitans*.—*Jungermania inflata*, var. d, *fluitans*, NEES. Hepat. Europ. II, p. 48; Synop. Hepat. p. 106; GOTT. & RABENH. Exsic. n. 581! AUST. Exsic. n. 35!—*Cephalozia obtusiloba*, LINDB. Bot. Not. 1872, p. 164; DUMORT. Hepat. Europ. (1874) p. 89.—*C. cladorrhizans*, GEO. STABLER in litt. Jan. 1, 1876.—*C. fluitans*, Aust. MSS.

Caulis prælongus, inter Sphagna scandens vel "in aqua fluitans," e ventre flagellifero-ramosus et hic illic copiose radiculosus, dissite foliosus. Folia caulina pallida (semper?), laxa, e basi angustiori vix decurrente, oblongo-elliptica, profunde biloba, margine integerrima, sinu angusto, lobis obtusis, magis minusve inæqualibus (ventrali longiore), apice incurvo planove. Amphigastria minuta appressa inconspicua (nonnunquam obsolete) subdifformia, sed plerumque triangulari-lanceolata, apice angustissime fisso et incurvo. Flores dioici. Perichætium magnum, in ramulo ventrali longiusculo et brevissimo inferne microphyllo terminali; ejus folia caulinis subconformia, longiora, ovato-oblonga, lobis acutis vel acutiusculis; amphigastria exteriora quadrato-oblonga subcuneatave, obtuse et inæqualiter emarginato-biloba, interiora elongata, angusta et integra. Colesula (immatura) brevis, ovalis, obtusa, obtussime trigona, ore plicato sublacinulato, laciniis truncatis, nudis. Andrœcium (amentulo masc.) vel magnum et in caule primario vel ramulo logiusculo continuum, vel parvum et in ramulo perbrevi terminale; folia perigonialia fere conformia, conferta margine dorsali plano et nudo vel inflexo et tunc obtuse unidentato, antheridium singulum in axillo singulo foventia; amphigastria majora et magis conspicua.

var. b, FLAGELLIFERA.—*Jung. inflata*, var. b, *flagellifera*, Synop. Hepat. p. 106. "——flagellis ventralibus crebris longis foliolis parvis bifidis distantibus inspersis. An distincta species?" Synop. Hepat. l. c. adnot.

I am indebted to Mr. GEO. STABLER, of Levens, England, for fruiting specimens. The plant grows in peat bogs from New Jersey to Canada, as well as in the North-

ern part of Europe. It resembles a pale form of *Jung. inflata* so closely in size, and in the shape and texture of the leaf, that it is not easy to distinguish between the two plants when they are sterile. However, besides the different character and position of the colesula, etc., the latter has the leaves more closely placed (particularly the upperones), and usually inclined to become fuscous; the stems are mostly simple, sometimes forked but never with ventral branches, and the amphigastria (extremely rare) are obtusely lobed.

CALYPOGEIA BIROSTRIS (*Tayl.*).—"*Jungermania birostris Mss. T. T.* (*Chiloscyphus*). Caule procumbente subdiviso, surculis planis, foliis distichis ovatis concaviusculis apice bidentatis, margine subundato integerrimo, stipulis subquadratis altius bifidis segmentis bidentatis. (Fructu desunt.) Planta pallidissima virens, uncialis et altior. Folia et stipularum segmente apice exsecta sinu obtuso. Nepal, (with *Hypnum hygrophilum*)." Herb. TAYL.

Stems *less* than an inch long, *not* divided but proliferous from the underside without ventral flagellæ. Leaves succubous. Much like *C. bidentula* NEES, but smaller, with the teeth at the apex of the leaves more acute, the sinus more exactly lunulate, amphigastria bifurcate, etc.

CALYPOGEIA BALDWINI, *n. sp.*—Caule elongato gracili simplici e ventre prolifero eflagellari (semper?), foliis subcontiguis oblique ovatis complanatis subconvexis, apice rotundato oblique subtruncatove integro obsoleteve emarginato, margine ventrali longe decurrente, reti laxiusculo versus apicem sensim minore, amphigastriis distantibus rotundo-scutelliformibus patentibus caule paulum latioribus obscure repando-dentatis apice obtuse subemarginatis fere integris, fructu—.

Island of East Maui (Sandwich), *Dr. Baldwin.* 1875 (*Eaton*).

A very distinct species, well characterized by its slender (Omphalanthus-like), habit, and by its almost entire, ovate-orbicular amphigastria. Stems 1—2 inches long, by about ½–⅔ of a line wide. Color pale green.

MASTIGOBRYUM? INTREGRIFOLIUM, *n. sp.*—Plantæ minutæ flagelliferæ; caule rigido, foliis late ovatis obtusis vel obtusiusculis sæpe obtusiuscule apiculatis integris et integerrimis (raro apice angusto obscure valde inæqualiter emarginato-bidentatis) e basi planiuscula erecto-subverticali subincurvis, amphigastriis (quam foliis) paulo minoribus basi magis patentibus leniter concavis cæteroquin fere conformibus, reti punctiformi, cellulis parvis valde discretis opacis intercalaribus vitreo-pellucidis, fructu——.

With *Sendtnera juniperina*, Sandwich Islands, *Baldwin;* very rare.

About the size of *Sendtnera gracilis*, NEES. and somewhat resembling it, but the stems are shorter and more rigid, the leaves are broader and entire and the areolation is different, etc. Here and there a small fascicle of rootlets are found proceeding from the base of an amphigastrium. These are hyaline, nearly as long as the amphigastria, and have the free end pedately about 5 or 6 parted. (An *Mastigophora* species?)

RADULA AUSTRALIS, *n. sp.*—Ab *R. obconica*, Sulliv. cui valde affinis differt: statura paulum majore, foliis magis ovatis, lobulo majore obtusiore, reti pellucidiore, perianthio longiore basi minus angustato textura haud opaco, et præsertim inflorescentia dioica.

Near Augusta, Georgia, *Sullivant* (1845). Aments (male spikes) short and broad, found only on the branches, which are of various lengths, terminal (or rarely interrupted). Perianth elongated, compressed-cylindrical from a pyriform or obconic base, the mouth 2-lipped, the lips emarginate or crenate; its texture is similar to that of the leaves. Stems ½–1 inch long, prostrate, sparingly subpinnately branched, loosely cæspitose. Leaves nearly or quite as decurrent as in *R. pallens* (SWARTZ), lobule adnate to the stem along its inner margin. *R. pallens* is a larger species, with stems dichotomously (never pinnately) branched; aments much longer, not terminal, perianths less elongated (always?), lower lobe of the leaf smaller and less acute, areolation not so distinct, etc.